


Knowledge Exchange Seminar Series (KESS)

...is a forum that encourages debate on a wide range of research findings, with the overall aim of promoting evidence-based policy and law-making within Northern Ireland



Exploring the relationship between anxiety /sleeping problems and suicidal behaviours.

Dr Denise O'Hagan
Dr Gillian Armstrong

Overview

- Prevalence of anxiety and insomnia
- Recommended treatment/ management of anxiety /insomnia
- Relationship between anxiety/ sleep disorders and suicidal behaviours
- Background to research question
- Results of a systematic literature review
- Cautions regarding interpretation
- Recommendations



Prevalence

Anxiety disorder (N Ireland)

12 month prevalence = 14.6 % (Bunting 2013)

Lifetime prevalence = 22.6% (Bunting 2012)

Insomnia (UK)

Prevalence – 37% (Morphy 2007)

Often persistent, with 69% continuing to experience insomnia at 1 year

15% incidence over next year in those not experiencing insomnia at baseline



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Clinical Guidelines re Prescribing

Anxiety

NICE:

- recommend stepped care model of intervention.
- Steps 1-2 active monitoring, (guided) self help, psychoeducation
- Steps 3-4 high intensity psychological intervention +/- drug therapy SSRI/ SNRI
- **Do not offer a benzodiazepine for the treatment of GAD in primary or secondary care except as a short-term measure during crises.**

Insomnia

NICE:

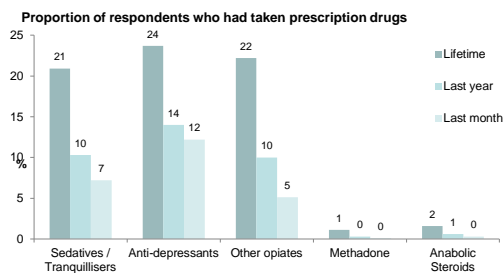
- Identify underlying causes. Good sleep hygiene
- Only short term course < 2 weeks of drug therapy (benzodiazepine or Z drug) in specific situations.
- Drug therapy generally not recommended for long term management of insomnia.
- Melatonin
- Referral to sleep clinics



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Drug Prevalence Suvery in Northern Ireland (NISRA) – 2014/15

Asks about use - both prescribed and other access



- People living in the most deprived quintile were >2 as likely as those in the least deprived quintile to have used a sedative or tranquilliser in the past year (15% vs 6%)



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Relationship between anxiety and suicidal behaviours

Systematic Review by Kanwar et al 2013

Quality of the evidence reported as low to moderate,

Findings:

Compared to those without anxiety, patients with anxiety were more likely to have:

- suicidal ideations (OR = 2.89, 95% CI: 2.09, 4.00),
- attempted suicides (OR = 2.47, 95% CI: 1.96, 3.10),
- completed suicides (OR = 3.34, 95% CI: 2.13, 5.25),
- any suicidal behaviours (OR = 2.85, 95% CI: 2.35, 3.46).

Systematic review Malik et al 2014

sleep disorder associated with any psychiatric condition was found to be associated with an increased risk of suicidal behaviour

Need for GPs and other professionals to be aware of the risks in managing such patients.



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Background to research question

Paper by Mok et al 2013

Why does Scotland have a higher suicide rate than England? An area-level investigation of health and social factors.

J Epidemiol Community Health 2013 JAN;67(1):63-70.

Mok examined a broad range of ecological risk factors including: psychotropic drugs, alcohol and drug use, socioeconomic deprivation and social fragmentation, and other health related indices enumerated at small area level⁽⁴⁾.

- Fifty-seven percent (57%) of the excess suicide risk in Scotland was explained by a range of area-level measures
- **Prescription of psychotropic drugs was the variable most strongly associated with the between-country differences in suicide risk, accounting for 42% of the differential.**

Mok et al. offered 3 explanations for high rates of psychotropic drug prescribing in Scotland:

- rate of psychotropic medication prescribing may be a proxy for mental ill health, and represent an increased prevalence of mental health problems in Scotland;
- may reflect styles of help seeking behaviour, and propensity to demand medication;
- may reflect prescribing practice and indicate availability of psychological interventions

Questions:

Author contacted

- Did not analyse by specific category of psychotropic drugs but stated majority were anti-depressants



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Relevance to Northern Ireland?

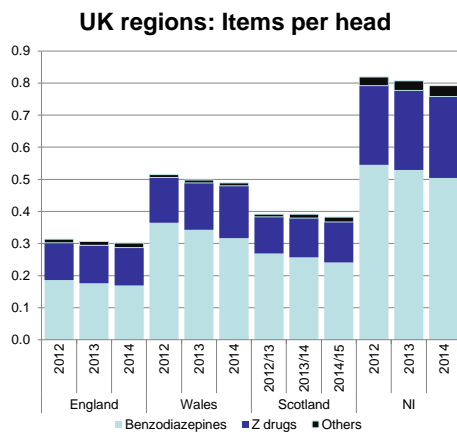
- Higher rates of suicide, self harm and burden of mental illness in NI than other parts of UK
- High rates of psychotropic drug prescribing in NI
 - Use of any prescribed psychotropic medication in past year
 - 14.9% NI v 12.3% European average (Benson 2014)
 - High rates of anxiolytic and hypnotic prescribing in NI vs other UK countries
- Benzodiazepines most common drug taken in intentional self harm in NI (31%) and Republic of Ireland (42%) . Around 13% in England.
- Benzodiazepines detected at post mortem in 24% of all suicides in NI where toxicology tests carried out (Benson, O'Neill University of Ulster).

Historically 1966-76 - three fold rise in prescription of benzodiazepine tranquilliser use (King et al 1982)



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Prescribed Anxiolytics and Hypnotics



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Questions raised

Risk of suicide associated with use of psychotropic medications?

Series of literature reviews carried out by Dr Gillian Armstrong, during and following Masters in Public Health, QUB.

- Population based studies examining antidepressant prescribing and suicide
-No evidence of positive correlation with suicide rates for adults /children.
- Population based studies examining anxiolytics and suicide
- Population based studies examining benzodiazepines and suicide - presented today.



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A review of the published literature

Is there an association between benzodiazepine use and suicide?

Dr Gillian Armstrong



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Methods

Systematic literature review

- Five databases searched in August 2014
 - MEDLINE, EMBASE, PsychINFO, CINAHL Plus, Web of Science

Inclusion criteria

- Population based observational study designs
- Intervention: use of benzodiazepines
- Outcome: completed suicide



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Search results

No previous literature review identified

1191 records screened

->23 full text articles identified

->18 studies met final inclusion criteria

Study designs identified: cohort, case control,
toxicology, and time trend



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Cohort study

Nurses Health Study, 2002

- USA
- Population 94,110 observed over 14 years
- 73 suicides
- 14% of completed suicides had been prescribed diazepam, compared to 3% of controls
- **Use of diazepam associated with 5x increased risk of suicide (RR 4.9, CI 2.5-9.7)**

Feskanich D, Hastrup JL, Marshall JR, Colditz GA, Stampfer MJ, Willett WC, et al. Stress and suicide in the Nurses' Health Study. J Epidemiol Community Health 2002 02;56(2):95-98.



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Case control studies

National Confidential Inquiry into Suicide and Homicide by People with Mental Illness, 2014

- English population of over 16 year olds
- 1:20 case control study with 2,384 suicides: 46,899 controls
- 19% of suicides were on a benzodiazepine, compared to 3% of controls
- **Use of benzodiazepine associated with 7x increased risk of suicide (OR 7.0, CI 6.2-7.9)**
- Combination of benzodiazepine and antidepressant was associated with 18x increased risk of suicide

University of Manchester. Suicide in primary care in England: 2002-2011. National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCISH). 2014.



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Case control studies

British Columbia, 2008

- Over 65s
- 1:5 case control study
- 602 suicides
- 28.4% suicides were on benzodiazepines, compared to 5.8% of controls
- **Use of benzodiazepine associated with 4x increased risk of suicide (OR 4.5, CI 3.3-6.1)**

Voaklander DC, Rowe BH, Dryden DM, Pahal J, Saar P, Kelly KD. Medical illness, medication use and suicide in seniors: A population-based case-control study. J Epidemiol Community Health Feb 2008;62(2):138-146



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Summary of results from cohort and case control studies

Use of benzodiazepine associated with
x4-7 increased risk of suicide



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Time trend studies

Denmark 1970-2000

10% increase in benzodiazepine sales associated with

- 6% increase in suicide rate in men
- 10% increase in suicide rate in women
- increase in suicide by benzodiazepine overdose

Increased prescribing of benzodiazepines associated with
higher rates of suicide

Nordentoft M, Qin P, Helweg-Larsen K, Juel K. Time-trends in method-specific suicide rates compared with the availability of specific compounds. The Danish experience. Nordic Journal of Psychiatry 2006 March 2006;60(2):97-106.



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Time trends studies

Sweden 1969-1996

- Examined if changes in prescribing are associated with changes in rates of drug related suicides in the elderly
- Benzodiazepines were the dominant drug used by the elderly for fatal self poisoning
- Rates of suicide using benzodiazepines increased in elderly despite decreasing prescription

Carlsten A, Waern M, Allebeck P. Suicides by drug poisoning among the elderly in Sweden 1969-1996. Soc Psychiatry Psychiatr Epidemiol 1999 November 1999;34(11):609-614



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Toxicology studies of completed suicide

13 studies

England and Wales, USA, Sweden, Scandanavia, Brazil, Australia

All studies found benzodiazepines were more commonly detected in completed suicides than would be expected from population prescription rates

- Rates of detection varied from 10-51% in different populations (one outlier of 0.5%)
- Stronger relationship in older people
- More common in suicide by fatal poisoning, than in all cause suicide



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References toxicology studies

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- Miziara ID. Suicidal hanging in Franco da Rocha, Brazil: A six-year prospective and retrospective study. *Indian Journal of Forensic Medicine and Toxicology* 2011 July-December 2011;5(2):14-17.



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Summary of findings of systematic literature review

- A number of studies have observed an increased risk of suicide associated with benzodiazepine use
- Risk appears greatest in the elderly



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Cautions regarding interpretation

- The study designs are observational therefore cannot provide definitive evidence of a causal link
- The quality of these studies is mixed, with a wide range of study designs and sample sizes. Some are in settings not directly applicable to Northern Ireland.
- Some were ecological studies - an observed association at a population group level may not hold true for an individual within that group (Ecological Fallacy)
- Use of benzodiazepines often a marker for underlying mental health problems, which are a known risk factor for suicide
- There may be other confounding factors not yet explored which account for this relationship.
- Further research required.



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In conclusion...

While there appears to be an association we cannot state a causal relationship between benzodiazepines and suicide

Underlying mental health issues and other confounders

Nevertheless – for other reasons it is imperative to:

- reduce prescribing and promote appropriate prescribing and access to alternative management strategies for anxiety and insomnia
- prescribe with caution to elderly and those at risk of self harm/suicide
- consider further research in this area



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Recommendations

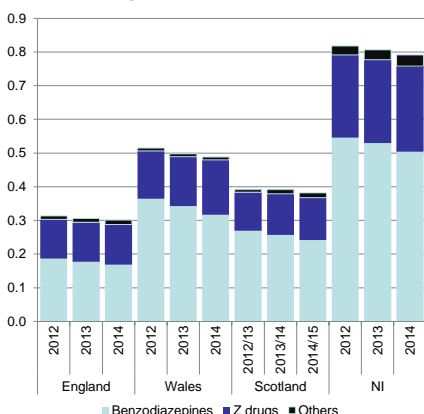
- Ensuring access to a range of appropriate interventions for people experiencing anxiety and insomnia in line with NICE guidance. Raise awareness in public about non-pharmacological management (NB without reference to possible suicide risk)
- Ensure suicide prevention initiatives take account of the evidence relating to suicide risk associated with anxiety
- Continue surveillance of benzodiazepine prescribing, particularly in relation to long term use, elderly.
- Continue to work with GPs to promote appropriate prescribing– as per current Action Plans DHSSPS/PHA/ HSCB and other agencies.
- Importance of continuing to work with GP Practices in relation to appropriate prescribing - ? Focus on elderly, Evidence based programmes to reduce benzodiazepine prescribing
Model in SE Trust area highlighted in English CMO Report 2013
- Care in prescribing for those at risk of self harm/suicide (and their household) to reduce access to means of self harm/suicide. Use of specific benzos that are less toxic in overdose
- Consider introduction of quality initiatives in management of sleep and anxiety disorders in primary care, and consider inclusion in the Quality and Outcomes Framework
- Consider use of information technology systems in primary care to flag patients on benzodiazepines and/or antidepressants who may be at elevated risk of suicide (ref NCI recommendation)
- Consider feasibility / affordability of toxicology screening in all cases of suicide to better understand the issue at individual level. (K. Galway 2015)
- Continue to address the issue of prescription drug misuse as per current multi-agency plans
- Continue / strengthen efforts to address illicit access – internet/ fraudulent access . Eg Operation Pangea
- Further research



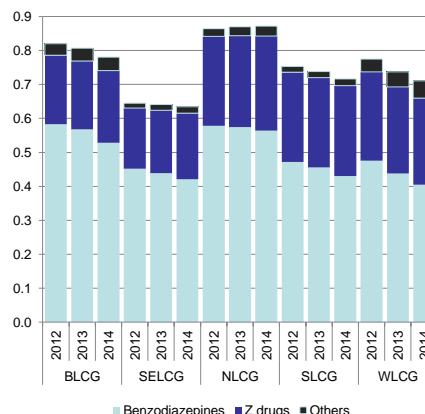
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Anxiolytics and Hypnotics

UK regions: Items per head



LCGs: Items per head



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